

**ANNEX 6-1**

## **Sound waves and vegetal organisms**

*by*

Étienne Boucher  
Marie-Hélène Jolicœur  
Amélie Boudreau  
Olivier Bergeron

*students at Gérald-Godin College (Montréal, Canada)*

### **Hypothesis**

Exposing plants to a particular "protein music" stimulates production of the corresponding protein.

### **Theory**

Our experiment is based on the work of Dr. Joel Sternhelmer, a French physicist who developed a theory of harmonic resonance relating sound waves to de Broglie waves associated with amino acid assembly during protein synthesis.

### **Peroxidase P7**

Overproduction of this enzyme has inhibitory effects on root development and overall growth.

*Brassica rapa*

Fast-growing plant (15 cm in 15 days)

Sub-kingdom: Vascularia  
Branch: Spermatophyta  
Sub-branch: Angiosperma  
Class: Dicotyledona  
Order: Crucifera

### **Experimental set-up**

Loudspeaker  
two 30-W fluorescent tubes

length  
width

**Two controlled environments**

- Lighting
- Soundproofing
- Type of soil
- Quantity of water

Permanent computer-assisted data recording of certain parameters

**Experimental protocol**

Two identical culture groups of 20 plants each were established. One group was exposed to a series of sound waves 30 minutes per day for 15 days. Since submitting our report, we have inverted the groups and repeated the experiment.

**Results**

Based on the two experiments, we noted that growth of the experimental group was considerably inhibited. Overproduction of the protein peroxidase P7 could explain those results.

**Conclusion**

The results obtained confirm our hypothesis that it is possible to influence the synthesis of a protein by applying a series of specific sound waves corresponding to the amino acid sequence of the protein.